MiniCure™

Customer Product Manual
Part 7119745C
Issued 08/07

global UV solutions

NORDSON UV LTD • SLOUGH, BERKSHIRE • UK

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Congratulations on the Purchase of Your Nordson Product

Nordson equipment is engineered and manufactured in accordance with strict specifications, using high quality components and state-of-the-art technologies that assure reliable, long-term performance. Your product was thoroughly tested for proper operation prior to shipment.

Before unpacking and installing your new equipment, please read this manual. It is your guide to safe installation, productive operation and effective maintenance. We recommend that you keep the manual available for future reference.

Your Safety is Important to Nordson

Carefully read the *Safety* section. Your product is designed for safe operation when used according to the published instructions. Potential hazards exist when operating instructions are not followed.

Manufacturer of Equipment

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Czech Republic		4205-4159 2411	4205-4124 4971
Denmark	*Hot Melt*	45-43-66 0123	45-43-64 1101
	Finishing	45-43-200 300	45-43-430 359
Finland		358-9-530 8080	358-9-530 80850
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Poland		48-22-836 4495	48-22-836 7042
Portugal		351-22-961 9400	351-22-961 9409
Russia		7-812-718 62 63	7-812-718 62 63
Slovak Republic		4205-4159 2411	4205-4124 4971
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Switzerland		41-61-411 3838	41-61-411 3818
United Kingdom	*Hot Melt*	44-1844-26 4500	44-1844-21 5358
	Finishing	44-161-495 4200	44-161-428 6716
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	Finishing	1-880-433 9319	1-888-229 4580
	Nordson UV	1-440-985 4592	1-440-985 4593

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Product Disposal Instructions

The symbol shown below and on the product means that the product is classed as Electrical or Electronic Equipment and should not be disposed with other commercial waste at the end of its working life.

The Waste of Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC) has been put in place to recycle products using best available recovery and recycling techniques to minimise the impact on the environment, treat any hazardous substances and avoid the increasing landfill.

Please contact Nordson UV at the end of the working life of this product for advice on disposal. This product does contain non-RoHS compliant components and should not be mixed with other commercial waste.

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Section 1
Safety

Introduction

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to all persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks. Work on electrical parts and assemblies is only to be executed by a qualified competent electrical engineer.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include, but not limited to:

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

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Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

All phases of equipment installation must comply with all federal, state, and local codes.

The MiniCure has been designed and manufactured using the following transposed harmonized European standards:

- EN12100 Parts 1&2:2003 Safety of machinery – Basic concepts, general principles for design
- EN60950 Part 1:2002 Information Technology Equipment – Safety – Part 1: General requirements
- EN61000–6–2:2005 Electromagnetic compatibility (EMC) – Generic standards – Immunity standard for industrial environments
- EN61000–6–4:2001 Electromagnetic compatibility (EMC) – Generic standards – Emission standard for industrial environments

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Personal Safety

To prevent injury follow these instructions.

- On a daily basis the Earth Leakage Circuit Breaker and the combined Isolator (at the connection box) should be tested.
  - This is carried out by pressing the 'Test' button while the system is switched on – the Isolator should switch off instantly.

WARNING: If the isolator or any indicator remains on, then it could indicate that a SERIOUS fault is present on your system. Inform your electrician or contact Nordson UV for advice immediately.

NOTE: To protect the Earth Leakage Sensor, this test function will only work while the lamps are switched off.

WARNING: NEVER LOOK AT A LIGHTED LAMP

- **ULTRA-VIOLET RADIATION IS HARMFUL TO EYES AND CAN BE HARMFUL TO SKIN. ALWAYS WEAR SUITABLE PROTECTION WHEN USING THIS SYSTEM.**
- **THIS SYSTEM IS DESIGNED TO BE USED FOR HAND FED OPERATION, SPECIAL UV SAFETY GLASSES & GLOVES MUST BE WORN.**

Suitable glasses (Part No. 7350033) and gloves (Part No. 7350657) are supplied with the unit, additional pairs are available from Nordson UV.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing any moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement. Wait 2 mins for the lamp to cool down.
- If you receive even a slight electrical shock, shut down all electrical equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

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Fire Safety

To avoid a fire or explosion, follow these instructions.

- Use only those inks and varnishes that cannot form explosive atmospheres when heated by the lamp head (i.e. inks and varnishes whose safety data sheets specify a flammable limit must not be used).
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Provide adequate ventilation to prevent dangerous concentrations of volatile materials or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits while working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Shut down all equipment immediately if you notice sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts, immediately shut off the system and exhaust fan.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Only use replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice or refer to the spares list in this manual.

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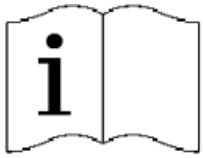
Label Definitions

Refer to Manual



Refer to the operating manual for further information.

Warning! UV Radiation

Protective measures are necessary. Unprotected exposure to the UV light is likely to have adverse effects on health. Gloves and eye protection must be worn. Personnel in the vicinity of the device must be protected from exposure by the use of suitable guarding.

Safety Glasses

UV protection safety glasses must be worn when operating this equipment. Unprotected exposure to the UV light is likely to have adverse effects on health.

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Gloves

UV protection gloves must be worn when operating this equipment. Unprotected exposure to the UV light is likely to have adverse effects on health.

Capacitor

WARNING: Capacitor must be discharged to avoid electric shock.

High Voltage

WARNING: High voltage connections exposed on removal of cover.

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Hot Surfaces

WARNING: Potentially hot surafces. Allow to cool before touching.

Handle with Care

WARNING: Handle with care. Do not break the quartz lamp; mercury contained within.

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Equipment safety

Introduction

All equipment is designed and manufactured to Internationally Recognized Safety Standards to ensure that the health and safety of the operator is protected at all times. This is conditional to equipment being installed correctly by qualified personnel and operating instructions are strictly adhered to.

Everyone who is required to work with the drying equipment in any way, i.e. Installers, Operators, Service Engineers etc., must be made familiar with these safety instructions.

The equipment is designed for the accelerated drying of UV inks and coatings. No attempt should be made to dry alternative materials unless these have been cleared by the supplier for this drying technique.

This equipment is not designed for use in hazardous areas or hazardous environments (i.e. it is not flameproof).

High temperatures

UV reflector systems generally run at extremely high temperatures. It is therefore necessary to check that any exposed parts which may be touched by an operator or personnel are kept below a temperature of 60° C, dependent on the material type.

If you find that any surface is above 60° C please contact the Nordson UV service department.

High voltage

The UV curing equipment works at high voltages. It is therefore essential that should any fault develop, the operator is made aware that he should:

Switch the equipment off immediately, make no attempt to service the equipment himself, but call a qualified electrician, trained to service this type of equipment.

NOTE: This applies to the changing of lamps, where a possible lamp fault has occurred.

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Fire risk

With lamps running at up to 800 degrees Centigrade, there is always a risk of fire should any paper or materials get jammed under or in the lamp vicinity, or in the event of build-up of fluff, dirt or powder within the lamp housing.

Should such a situation occur, the operator must:

WARNING: Switch off the equipment immediately. If a fire extinguisher is to be used, make sure it is of a type which is suitable for use with electrical equipment.

A suitable fire extinguisher should be available near the unit.

This equipment is fitted with high temperature lamps. It is not designed to operate close to low flash point materials (solvents, etc.).

Safety precautions while servicing

Important Information

All electrical maintenance and servicing must be carried out by a qualified engineer. It is preferable to call in Nordson UV for this servicing facility.

WARNING: This equipment operates at high voltage and is therefore potentially dangerous. All precautions must be taken by the qualified engineer in servicing this equipment. The equipment must be isolated at the mains before opening any of the access covers.

In the event of your qualified engineer being unable to find fault with the equipment, then Nordson UV Service should be called in.

Control System Cleaning

It is essential that all contactors and relays are kept clean and free from dirt and dust ingression. These should be checked regularly, particularly in extremely dusty or powder-charged working rooms.

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High Voltage Connections

Careful checks should be kept on the lamp connections and high voltage connections within the equipment to make sure that these do not become dirty or coated with powder or other possible conducting material. They should be cleaned regularly, at least whenever the lamp is changed, possibly more often where a particularly heavily polluted atmosphere occurs. Also, while changing the lamps, a careful check should be made of the high voltage leads to make sure that no deterioration has occurred. Dirty contacts may cause a potential hazard.

Lamphead Cleaning

The air inlets in the reflector head should be regularly checked, so that it is ensured that they have not become blocked with dust or powder and that the air passages are clear.

High Temperatures

It should be noted that the reflector head runs at very high temperatures and the inside components become very hot during operation of the machine and the equipment. Therefore, when maintaining the equipment, a reasonable time should be allowed before access is attempted. Alternatively, precautions should be taken.

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Safety UV curing

NOTE: The subtrate collection tray on the outfeed of the unit forms part of the UV shielding. If this tray is not fitted alternative shielding methods must be provided for operator and bystander safety.

UV measurements in the infeed chamber at belt level are 20 Micro Watts/cm^2. If gloves and glasses are not used, then exposure to the UV should be limited to no more than 4 mins per day.

UV measurements in the delivery tray are between 0.8–1.0 Micro Watts/cm^2.

U.V. Radiation

UV radiation is generated from UV lamps and can be harmful if operator exposure exceeds recommended levels, (see *U.V. Permissible Exposure Levels* in this section).

Radiation is in the wavelength bands A B and C. Exposure to UV radiation can result in:

- Reddening of skin.
- Headaches
- Sore eyes

If any symptoms appear, investigations should be carried out.

Nordson UV can, on request, supply UV safety glasses – Part No. 7350033 and gloves – Part No. 7350657.

First Aid

On skin no treatment can immediately be made, however, soothing cream can be applied to the affected area.

For exposure to eyes medical attention should be sought immediately.

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Ozone Gas

Ozone is generated by reaction of short-wave UV radiation on air and is a gas which readily reverts to oxygen when mixed with atmospheric air as it is removed from the source of UV radiation. Quantity of ozone produced equates to 0.001 cu.ft/kWHr.

NOTE: Ozone should be ducted via a sealed duct to atmosphere and discharged according to local regulations. (Height and clearance from pedestrian walkways and opening windows, etc.).

Ozone checks using a Draeger measuring device should be carried out every 6 months, or immediately, if an operator can smell ozone. Please contact your local service department for availability and cost.

Outlet duct concentration is 0.3 PPM in a typical system. Threshold limit value (TVL) is 0.1 PPM in a working atmosphere.

Precautions

Symptoms of ozone present in the working environment.

Ozone has an irritant action on the mouth and throat and the Factory Inspectorate recommendation is that the level of ozone in the atmosphere of a factory should not exceed 0.1 PPM (TLV). Most people can smell ozone at about one third of the TLV. If there is any doubt as to whether the TLV is being exceeded, the company should take measurements to check whether the extraction system is adequate to keep the atmosphere well below 0.1 PPM.

If detected:

a. Shutdown system.

b. Check ducting for leaks.

c. Before starting check working area with ozone meter.

First Aid

If a person is overcome by ozone, the following precautions should be adopted:

a. Remove the patient to a warm uncontaminated atmosphere and loosen tight clothing at the neck and waist.

b. Keep the patient at rest.

c. If the patient has difficulty in breathing, oxygen may be administered provided that suitable apparatus and a trained operator are available.

d. If breathing is weak or has ceased, artificial respiration should be started. The mouth-to-mouth or mouth-to-nose methods are recommended.

e. Seek medical aid.

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Ozone poisoning should be treated symptomatically. This may include bed rest, analgesics to relieve pain, and antibiotics as may be prescribed by a medical practitioner.

Further details can be found on Guidance Note EH 38 from the Health and Safety Executive.

Mercury

Mercury is a silver colored liquid which is contained in medium pressure mercury arc lamps. In the case of Primarc lamps this is typically 0.5 – 2g.

Under normal operating conditions mercury presents no hazard as it is contained in the quartz tube of the lamp.

Mercury is toxic and must not be consumed or handled directly on the skin.

It is recommended that protective gloves and eye protection is worn when handling U.V. lamps.

In the event of spillage:

a. Use personal protective equipment to protect against eye and skin contact, ingestion and inhalation.

b. Contain the spill with wet sand and recover by vacuum suction. Do not use a vacuum cleaner as it will become contaminated and be a source of mercury vapor.

c. Spread a 50/50 mix of calcium hydroxide and flowers of sulphur over the affected area and allow to dry. Repeat until there is no visible trace of mercury. Special attention should be given to cracks and imperfections in the affected surface.

Spill kits are available from Primarc Ltd.

Lamp Disposal

Sensible precautions should be followed when disposing of Mercury Arc Lamps.

a. Wrap lamp in a plastic bag, seal and repack in the box provided.

b. Dispose of the lamp using an approved waste management company or refer to your local authority, alternatively

Contact one of the companies below for details of a disposal service for old lamps:

Primarc Limited
816 Leigh Road
Slough
Berkshire SL1 4BD
Tel: +44 (0)1753 558001

Horizon Lamps Inc.
2 Danforth Drive
Easton, PA 18045 USA
Tel: +1 610-829-4240
Free-phone: 877-422-8462

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First Aid

Eyes – Flush with plenty of water for 15 minutes, occasionally lifting the eyelids. OBTAIN MEDICAL ATTENTION.

Skin – Flush with plenty of soap and water for 15 minutes. Remove contaminated clothes and shoes. OBTAIN MEDICAL ATTENTION.

Ingestion – OBTAIN MEDICAL ATTENTION.

Inhalation – OBTAIN MEDICAL ATTENTION.

Further details can be found on Guidance note EH 17 from the Health and Safety Executive.

U.V. Ink and Generated Products

The relevant safety data sheets from the ink manufacturer must be followed when handling UV inks.

With some solvent based inks and varnishes there is a potential for the release of flammable substances during the printing process. These are not suitable for use with a UV drying system. Always consult the manufacturer and the manufactuter's data sheets before use with the UV drying system.

The materials used in UV inks and varnishes are of a toxic nature. Before handling, it is essential all operators are conversant with the instructions provided by the supplier of these materials as to their safe use and disposal.

During operation, there is a possibility that odor (a smell) may be generated.

This is taken away by the air cooling extraction system.

System Checks

Nordson UV will undertake to check an installation for ozone and UV radiation.

Please contact our Service Department for availability and costs.

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U.V. Permissible Exposure Levels

Permissible Ultra Violet Exposures As Recommended By The American Conference Of Government And Industrial Hygienists

Duration of Exposure (per day)	Effective Irradiance E Micro Watts/cm sq.
8 hours	0.1
4 hours	0.2
2 hours	0.4
1 hour	0.8
30 minutes	1.7
15 minutes	3.3
10 minutes	5.0
5 minutes	10
1 minute	50
30 seconds	100
10 seconds	300
1 second	3000
0.5 seconds	6000
0.1 seconds	30000

Permissible exposure time in seconds for exposure to actinic ultra-violet radiation incident upon the unprotected skin or eye may be determined with reference to table above, which provides exposure times corresponding to effective irradiance in micro watts/cm sq.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out electrical power.
- Identify the reason for the malfunction and correct it before restarting the equipment.

Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

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Section 2
Description

The conveyor unit features a full length open-ended belt which is speed adjustable and can be set to run between 5 and 75 metres per minute. The belt is made from PTFE coated glass fibre to ensure smooth and quiet operation.

The lamp housing is air-cooled and has a high power “pull-down” facility to allow substrate down to the equivalent of 85gsm paper to be used. The built-in high power fan has an air flow sensor which ensures that the hold-down system is effective and that the system remains cool.

The lamp reflector housing is easily accessible and is provided with an interlocked electrical circuit. This permits the lamp reflectors to be cleaned or changed with ease.

Entry and exit light shields allow only the minimum of UV light to escape.

A lamp power percentage meter and a lamp power switch down facility is provided, thereby allowing switching between 200 and 300 Wpi (80/120 W/cm) lamp power.

There is an hour timer to show how many hours the lamp has run.

Each conveyor comes complete with a high-quality Primarc manufactured ultra violet lamp.

For the utmost user protection an earth-leakage circuit breaker system is fitted.

All units CE approved.

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Section 3
Transport & Handling

Weights & Dimensions

Weight

90kg (200lb) Net

110kg (245lb) Gross

Dimensions

Height 480mm
Width 1360mm
Depth 520mm

Lifting

The machine can be lifted by 4 fit persons or lifting straps can be used. Avoid lifting the unit by the conveyor roller end covers. Care should be taken when lifting and positioning the unit.

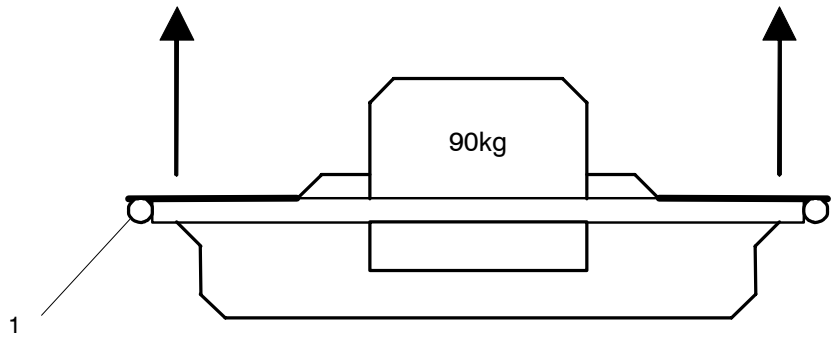

Fig. NUV 1A

Figure 3-1

1. End Covers

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Section 4
Installation

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

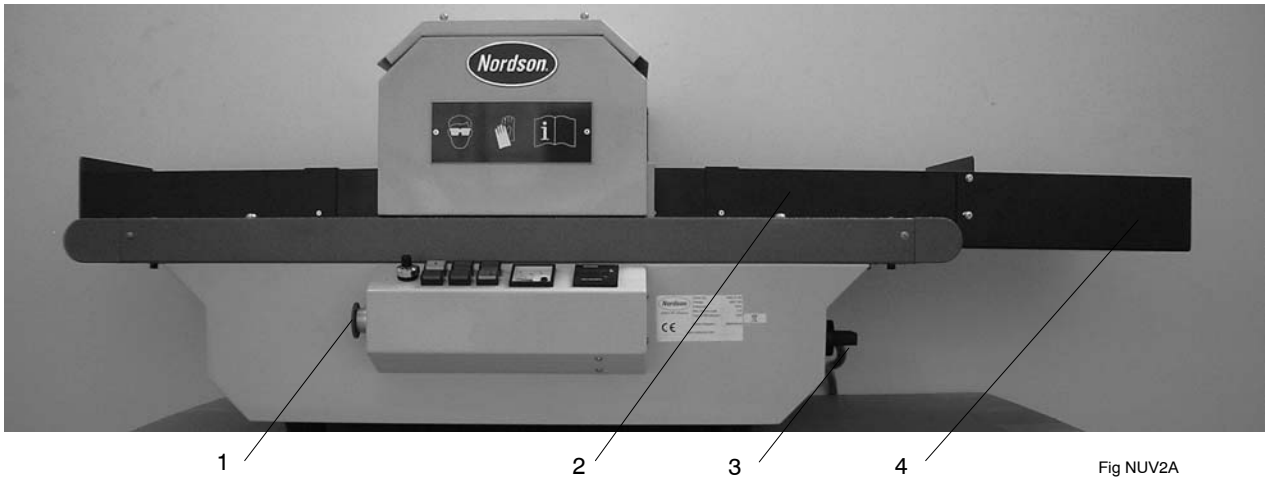

Figure 4-1

1. Emergency Stop
2. Outlet Shield
3. System Isolator
4. Substrate Collection Tray

In certain circumstances the lamp may be packed separately for transit. Please see the maintenance section 'Lamp Installation and Removal' for directions on how to fit the lamp.

The MiniCure must be professionally connected into a 3-phase + Neutral supply. This must be capable of supplying the **Voltage, Frequency** and **Amperage** specified on the rating plate of the unit (this is located on the front of the unit).

The electrical supply to the machine needs to be connected to the 1.5m connection cable that exits at the right hand side, next to the 'System Isolator'.

Connect the live supply cables **(L_1, L_2, L_3,)** and the Neutral cable **(N)** into a suitable fixed wall supply box.

The earth cable **(PE)** must also be connected.

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The air outlet port should be connected to 100mm diameter extraction ducting that must vent to atmosphere. **This must be a maximum of 2 metres long.** Larger diameter extraction tubing, and external balanced fan assistance are required if you have to make a **longer run than 2m**. It is advisable that this is not vented into any air-conditioning ducting or any existing extraction system without extreme caution. Please contact Nordson UV for advice if required.

NOTE: The air temperature flowing through this ducting can reach up to 80 degrees Centigrade, so adequate physical protection must be provided to ensure that accidental contact is avoided.

Fit the substrate collection tray to the outlet shield.

NOTE: The subtrate collection tray on the outfeed of the unit forms part of the UV shielding. If this tray is not fitted alternative shielding methods must be provided for operator and bystander safety.

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Section 5
Operation

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Turning on the system power

Check:

- The Emergency Stop Button is in the off (out) position. (To check twist clockwise).
- The lamp hood assembly is correctly in place.
- The 'lamp switch' is in the off (out) position.

The main 'System Isolator' switch can now be turned on.

- **Press and hold** the 'mains on' indicator on the control panel.
- Turn the isolator handle in a clockwise direction to the on position.
- Release the 'Mains On' indicator.

The following indicators should now be illuminated:

Mains On		Main Control Panel
Test		Next to System Isolator
No Airflow		Main Control Panel
Conveyor Stop		Main Control Panel

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NOTE: If any of the above Indicators are NOT illuminated, it could indicate a fault is present on your system. Inform your electrician or contact Nordson UV for advice.

WARNING: If this is the first time the unit has been switched on after installation or the Earth Leakage has not been tested within the previous 24 hours, press the Earth Leakage Test Button NOW. The isolator should immediately switch off cutting all power. If the isolator or any indicators remain on, then it could indicate a SERIOUS fault is present on your system. Inform your electrician or contact Nordson UV for advice immediately.

Starting the conveyor

Check:

- The 'lamp' switch is in the **OFF** position (out).
- The 'high power' switch is in the **ON** position (pressed in).

Press the 'conveyor start' switch and hold in until the 'No Airflow' indicator goes out. The main cooling fan and the conveyor should start to work.

CAUTION: Confirm visually that the conveyor belt is running.

Set the conveyor speed using the 10 turn dial on the control panel. Once set the position can be locked using the small lever on the edge of the dial.

WARNING: Caution when operating the conveyor belt continuously at very low speed with the lamp on High Power. Where possible, adjust speed to a minimum of 2 on the dial. This will prevent the possibility of the belt overheating. It is recommended that the operator is present at all times during operation.

Press the 'lamp on' switch and the UV lamp will ignite. The power % indicator meter will show a high power reading (approximately 150%).

When the lamp has 'burnt-in' the power % meter will show approximately 100%. This will take approximately 90 secs.

When the lamp has 'burnt-in' it can be switched to the lower power setting by releasing the 'high power' switch. The power meter should be registering a reduced reading (approximately 65%).

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NOTE: The lamp can be started on the low power setting, but may take longer to burn–in.

If the lamp does not start, the Lamp Power % meter will not register a reading. Please note, a lamp will not restart after operation until it has cooled. This can take up to 5 minutes after switching off.

Operation

Once the lamp has burnt in, the unit is now ready to accept samples to cure.

Samples should not exceed a maximum height of 10mm and lightweight samples should be affixed to a secure non–flammable plate to prevent them being drawn into the lamp under the forced ventilation of the lamp.

Wearing the appropriate PPE (gloves and glasses), lift the guarding to the infeed (Left Hand Side) and place the sample on the belt. Close the guarding. The sample should now pass under the UV lamp and drop into the receiving tray (Right Hand Side). The speed of the belt can be increased or decreased depending on the level of cure achieved.

CAUTION: The sample may be hot after passing under the UV lamp.

WARNING: IT IS RECOMMENDED THAT FLAMABLE SUBSTRATES (E.G. PAPER) PASSING UNDER THE UV LAMP ARE MONITORED TO ENSURE THEY EXIT THE HOUSING AND DO NOT RECEIVE EXCESSIVE UV RADIATION AS THIS COULD CAUSE A FIRE.

NOTE: This unit is not intended for use in a production environment.

Stopping conveyor & system shutdown

Switch the lamp off by releasing the 'lamp' switch.

Under normal conditions, wait 1–2 minutes before switching off the conveyor by pressing the 'conveyor stop' switch. (This is so that the conveyor belt is not stopped immediately under hot lamps).

NOTE: The main fan will continue to run for approximately 10 minutes. This will remove any latent heat from the system.

When the main fan has stopped, the system can be shut off from the 'System Isolator'. The 'System Isolator' should be shut off at the end of the working day or shift.

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Emergency stop

An Emergency Stop Button is provided. This is located on the side of the control panel.

NOTE: Pressing the Emergency Stop Button will immediately shut off all power. For this reason it should only be pressed when there is a real emergency, and not used for shutting off the machine under normal circumstances.

WARNING: IT SHOULD ALSO BE NOTED THAT WHEN PASSING FLAMMABLE SUBSTRATES (E.G. PAPER) THROUGH THE MACHINE THAT PRESSING THE EMERGENCY STOP BUTTON WHILE THE LAMPS ARE ON COULD CAUSE A FIRE. FOR THIS REASON IT IS ADVISABLE TO HAVE A FIRE EXTINGUISHER SUITABLE FOR ELECTRICAL FIRES NEAR TO THE UNIT AND FOR THE OPERATOR TO BE PRESENT AT ALL TIMES DURING OPERATION.

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Section 6
Maintenance

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Ultra-violet lamps

The MiniCure has Primarc manufactured Ultra–Violet Lamps which may need inspection and cleaning occasionally to ensure optimum performance. The lamp UV output will fall with 'normal' use as the special quartz glass that they are made out of unavoidably degrades. They will then need replacing with new Primarc lamps.

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Lamp installation & removal

Ensure the system is **completely** cool, this takes typically about 2 mins with the fan running.

Ensure the 'System Isolator' is in the **OFF** position.

Remove the hood assembly by lifting evenly from the front and back.

Remove the black reflector box assembly to expose the lamp brackets.

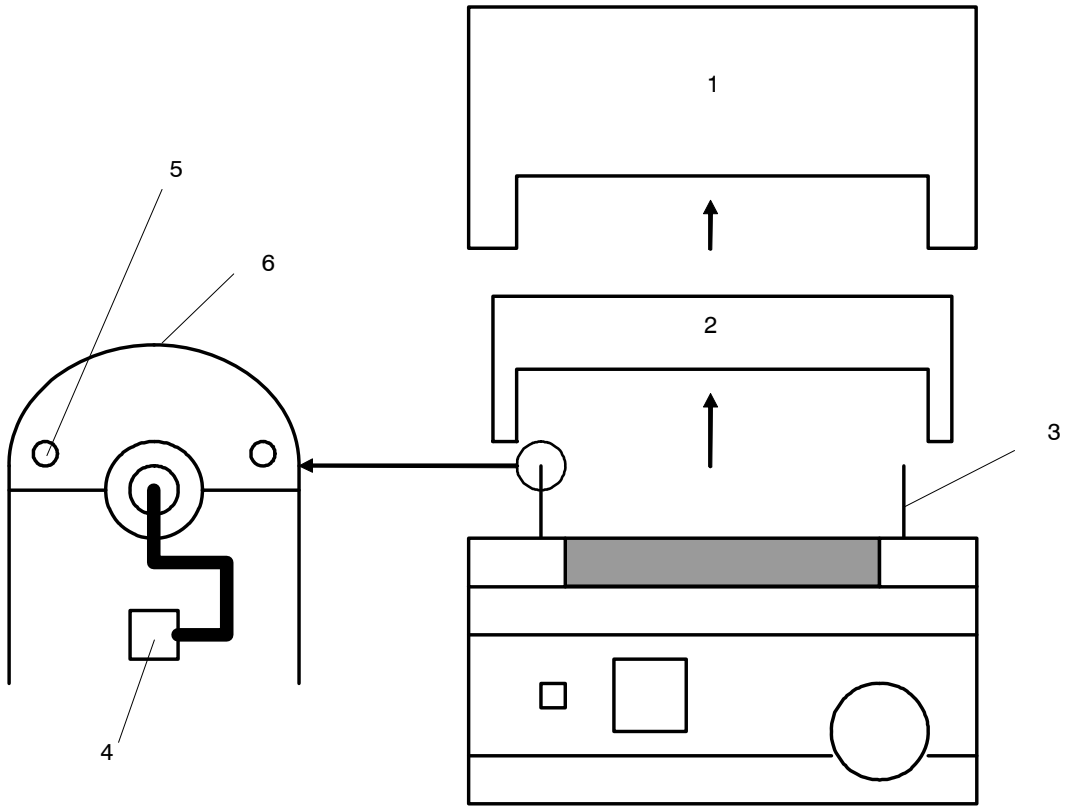

Figure 6-2

1. Hood
2. Reflector Box
3. Lamp Bracket
4. Connector Lamp Lead
5. 4 x Cross Head Screws
6. Retaining Clip

Release the two lamp retaining clips from the lamp brackets by undoing the four steel crosshead screws.

Fit the lamp into the lamp brackets avoiding touching the lamp's glass surface. If the lamp's surface does get contaminated, it should be cleaned with an alcohol based solvent that does not contain oils (e.g. isopropanol alcohol).

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NOTE: Any external contamination will burn onto the lamp's surface and cannot be removed.

The lamp leads can now be connected into the terminal blocks.

Carefully refit the Reflector Box ensuring the Reflectors are clean.

Finally, refit the Hood, noting that the UV Interlock Switch actuator is at the back of the unit. If the earth wire on the hood was disconnected ensure that it is re-connected before the hood is replaced.

Removal of the lamps is the reverse of this sequence.

Do not attempt to use other lamps.

Conveyor belt replacement & adjustment

Remove the conveyor 'End Covers' on the end opposite the 'System Isolator' by removing the 4 retaining screws.

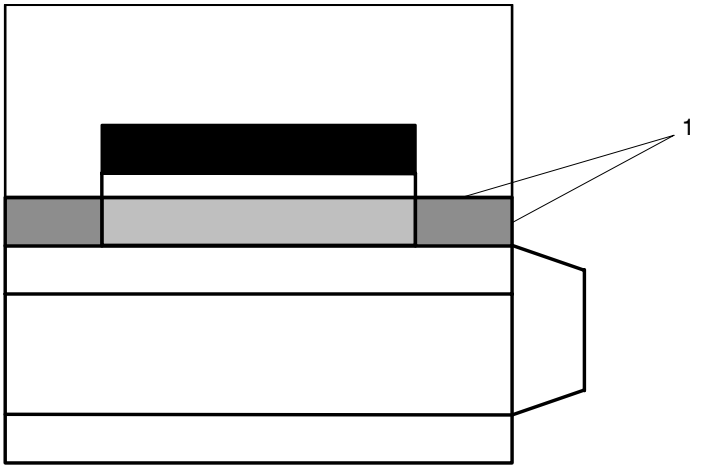

fig. NUV4A

Figure 6-3

1. Retaining Screws

Release the belt tension by slackening the tension adjusters using a 10mm spanner.

Find the belt joiner and remove the pin that connects it together. You may need to cut the wire with wire cutters.

Pull out the old conveyor belt.

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Feed in the new conveyor belt making sure that it passes through the underside of the conveyor correctly and through the 'Tracker Rollers' as shown below.

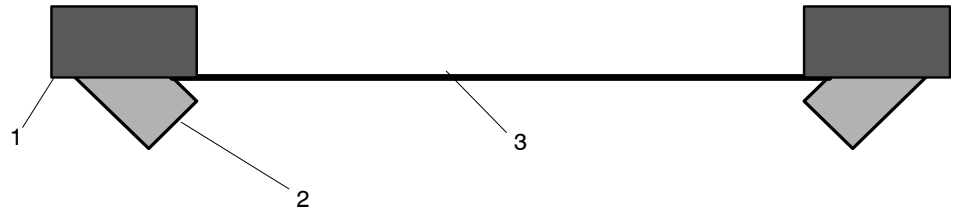

FIG. NUV5A

Figure 6-4

1. Horizontal Tracker Roller
2. Angled Tracker Roller
3. Belt

Join the new belt together using the new joiner pin supplied with the belt. Bend over the wire end to stop the pin from coming out. Cut the bent over end down to 3mm.

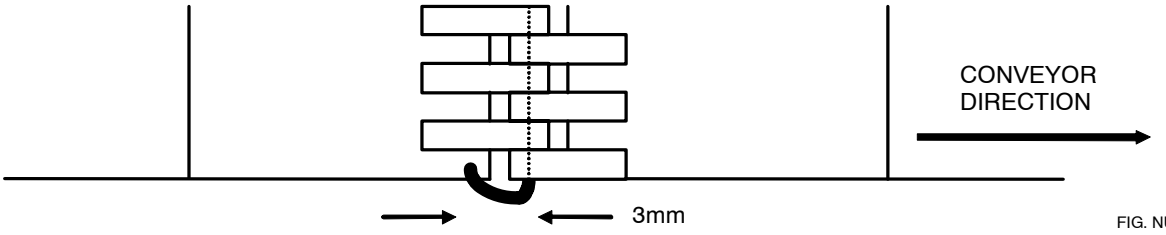

FIG. NUV6A

Figure 6-5

Tension the belt by re-tightening the 'Tension Adjusters'. Avoid over tightening the belt, only add enough tension to obtain an effective drive.

Carefully run the conveyor, slowly at first, adjusting the tension adjusters to ensure that the new belt runs centrally over the idle roller (entry end). Observe the 'Tracker Rollers' which are below the entry end of the conveyor to see if the belt is running correctly. Note: the belt may not track centrally over the drive roller (exit end), this is normal, and may change as the belt 'settles in'. Check occasionally that the belt is running correctly.

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Fuses & electrical equipment

The main electrical equipment on the MiniCure can be found in the lower cabinet. This is where the circuit fuses and relays are. The fuses can be accessed by removing the control panel, but if other maintenance is required the conveyor assembly can be removed from the lower cabinet.

WARNING: Only qualified personnel should access the electrical equipment of the MiniCure.

Ensure the 'System Isolator' is in the **OFF** position.

Remove the Hood assembly.

Release the two Lamp supply cables and feed them down through the rubber grommets into the lower cabinet.

Remove the control panel by removing the 4 x M8 hexagon key bolts.

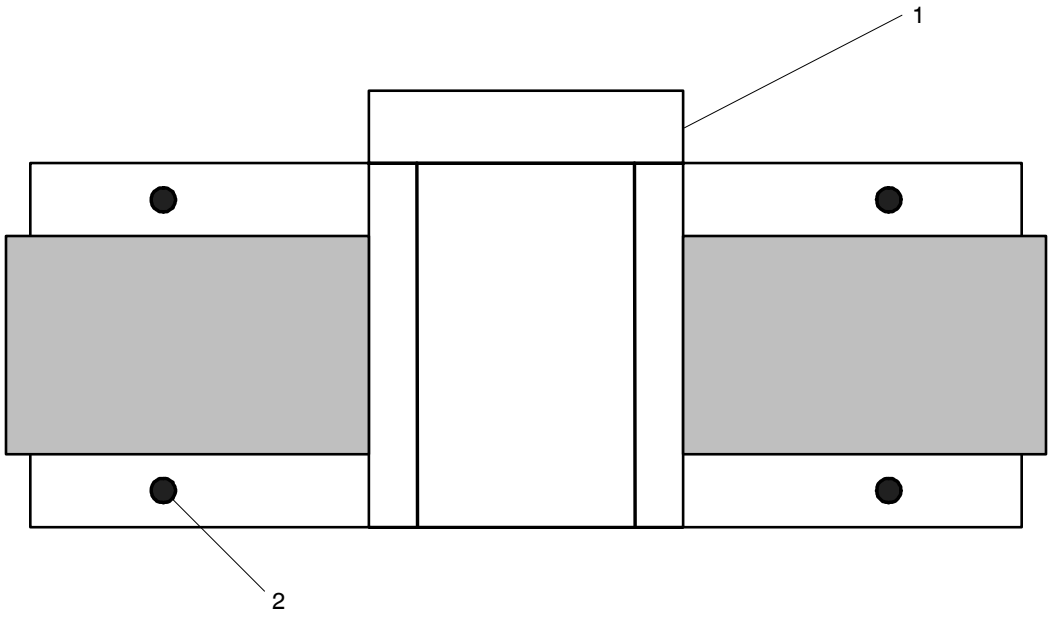

Figure 6-6

1. Control Panel Screws
2. 4 x M8 Hexagon Key Bolts

Disconnect the conveyor motor supply cable by unplugging the orange connector, reach in through the control panel aperture.

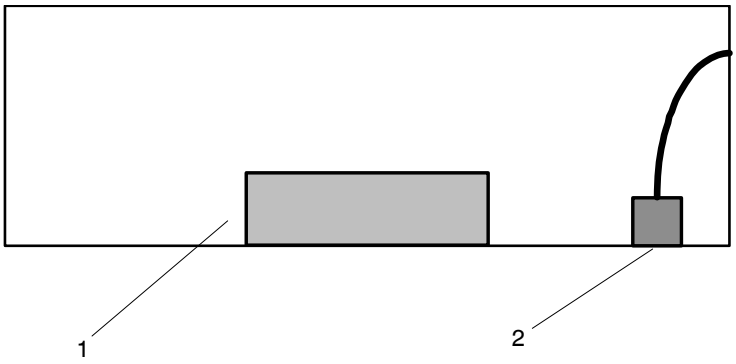

Figure 6-7 Control Panel Aperture

1. Fuses
2. Motor Connector (Orange Color)

Remove the 4 x M8 hexagon key bolts that secure the conveyor top in place.

With assistance, the complete conveyor assembly can now be removed from the lower cabinet to reveal the electrical components.

When replacing the conveyor, extra assistance may be required to feed the lamp supply cables back through the grommets. Also, ensure that the fan duct locates correctly into the fan before replacing the M8 bolts.

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Panel lamp replacement

The Panel lamps (indicators) contain low voltage bulbs that must be replaced for safety reasons when they become faulty. The colored front of each indicator can be carefully prised off with a small screwdriver, and the bulb replaced. Spare bulbs can be obtained from Nordson UV (Part No.7350652).

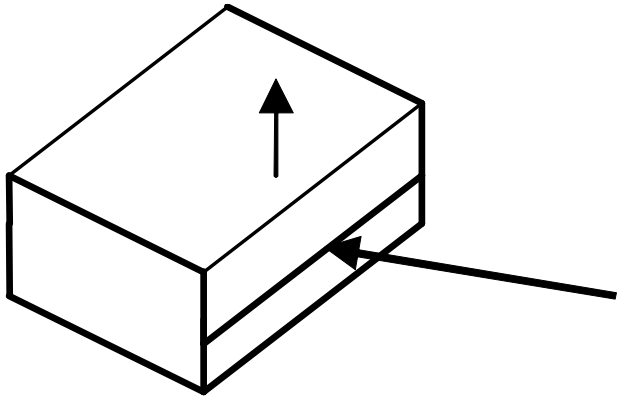

FIG. NUV9A

Figure 6-8

Other service operations

Due to the specialist nature of this equipment, we do not recommend that any other service operations are carried out by the end-user. Please contact Nordson UV to arrange for the equipment to be returned for inspection.

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Section 7
Parts

Introduction

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

Using the Illustrated Parts List

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (—) is used when the part number applies to all parts in the illustration.

The number in the Part column is the Nordson Corporation part number. A series of dashes in this column (- - - - - -) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

Item	Part	Description	Quantity	Note
—	0000000	Assembly	1	
1	000000	• Subassembly	2	A
2	000000	• • Part	1	

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Item	Part	Description	Quantity	Note
1	7350860	Light shield infeed	1	
2	7350481	Handle – cover	2	
3	7350480	Perspex cover – infeed	1	
4	7350861	Label UV cat 2	2	
5	7350862	Label high voltage	2	
6	7350863	Top Lid	1	
7	7350864	Hood	1	
8	7350865	Label UV Protective Equipment	1	

NOTE A:
B:
X:
AR: As Required
NS: Not Shown

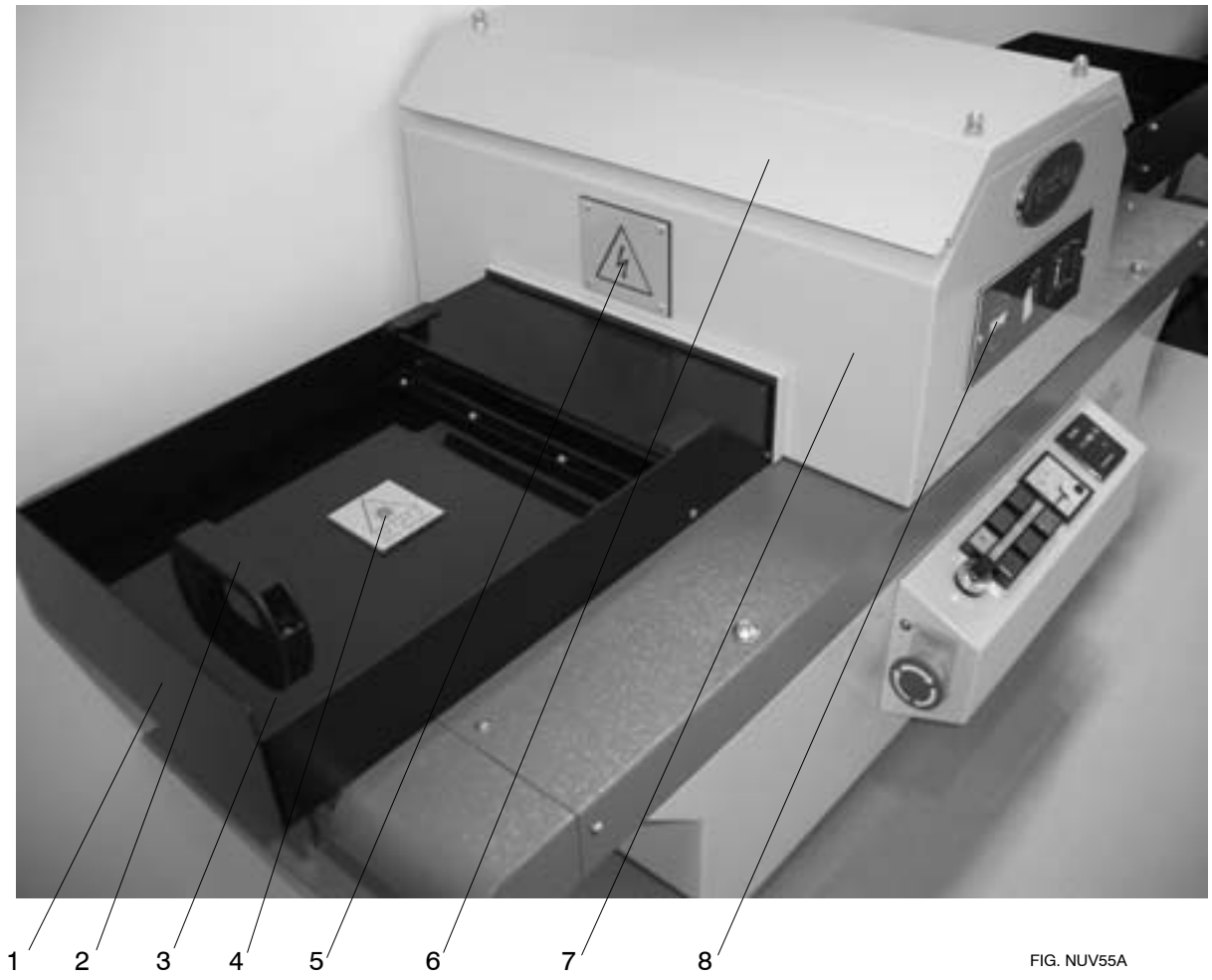

FIG. NUV55A

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Item	Part	Description	Quantity	Note
1	7350867	Lamp housing	1	
2	7350866	Label – hot surface/Hg	1	
3	7350682	Perspex cover – outfeed	1	
4	7350868	Light shield – outfeed	1	

NOTE A:
B:
X:
AR: As Required
NS: Not Shown

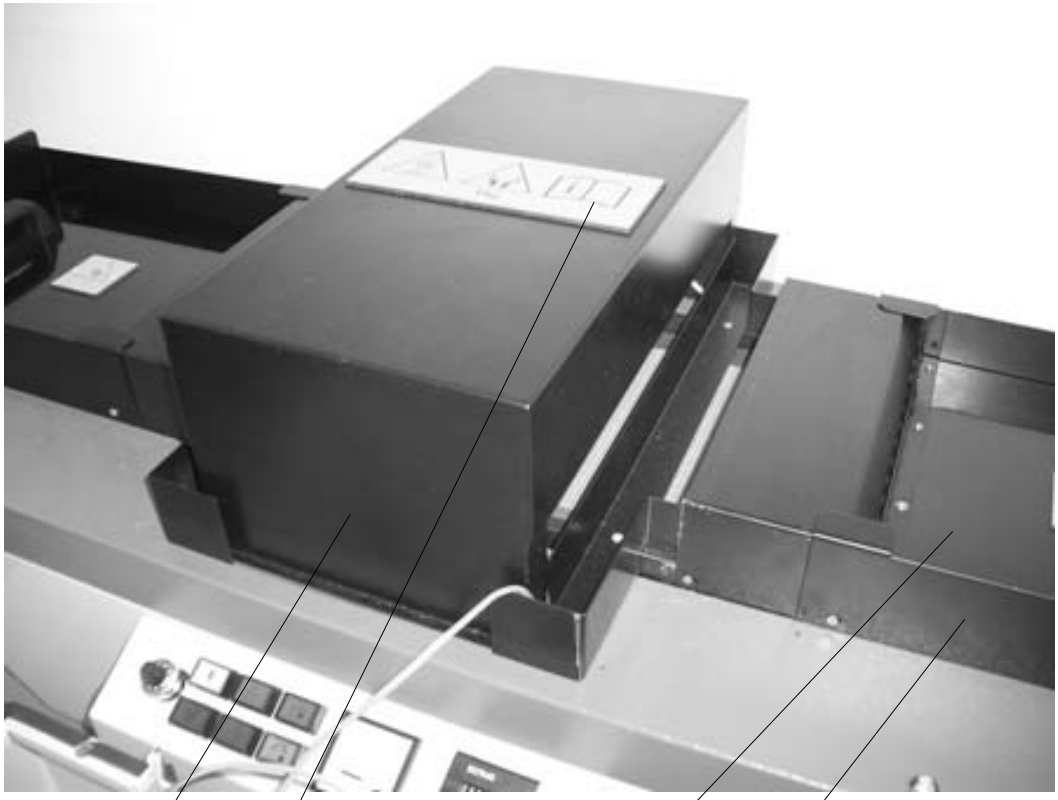

FIG. NUV56A

Item	Part	Description	Quantity	Note
1	7350399	Switch – emergency stop (S1.2)	1	
1	1056913	Contact – emergency stop switch (S1.2)	1	
2	7350487	Knob – potentiometer	1	
2	7350486	Potentiometer 10 turn – conveyor motor controller (PT1)	1	
3	7350495	Counter – lamp hours (50Hz) (P11)	1	
3	7350494	Counter – lamp hours (60Hz) (P11)	1	

NOTE A:
B:
X:
AR: As Required
NS: Not Shown

FIG. NUV57A

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Item	Part	Description	Quantity	Note
1	7350471	Ignitor – choke unit – (A1)	1	
2	7350493	Switch – hood safety (S9.1)	1	
3	7350469	Capacitor – power factor correction – (C11/C12/C13) – (50Hz)	3	
3	7350577	Capacitor – power factor correction – (C11/C12/C13) – (60Hz)	3	
4	7350476	Contactor – choke (K11/K12.1)	2	
5	7350613	Contactor – conveyor motor (K6.1)	1	
6	7350477	Relay 4 pole (K1.1/K2.2)	2	
8	7350489	Fan (M1)	1	
9	7350488	Flow Switch Assy – Fan (S2.1)	1	
10	7350472	Shaft handle – circuit breaker (Q0)	1	
10	7350576	Extension shaft – circuit breaker (Q0)	1	
10	7350473	Shunt release unit (50Hz) – circuit breaker (Q0)	1	
10	7350475	Circuit breaker unit (Q0)	1	
11	7350485	Controller – conveyor motor (A6.1)	1	
12	7350099	Earth Leakage Sensor – (A0)	1	
13	7350654	Transformer – control (T0) – (50Hz)	1	
13	7350571	Transformer – control (T0) – (60Hz)	1	
14	7350496	Timer – Fan control (K10.1)	1	
15	7350497	Timer – ignitor control (K14)	1	
16	7350491	Fuse 25A – aM– 10 x 38 (F11.1/F11.2)	2	
18	7350470	Choke unit – (L11/L12/L13) – (50Hz)	3	
18	7350656	Choke unit – (L11) – (60Hz)	1	
18	7350572	Choke unit – (L13) – (60Hz)	1	
19	7350614	D.C. Motor choke – (L6)	1	

NOTE A:

B:

X:

AR: As Required

NS: Not Shown

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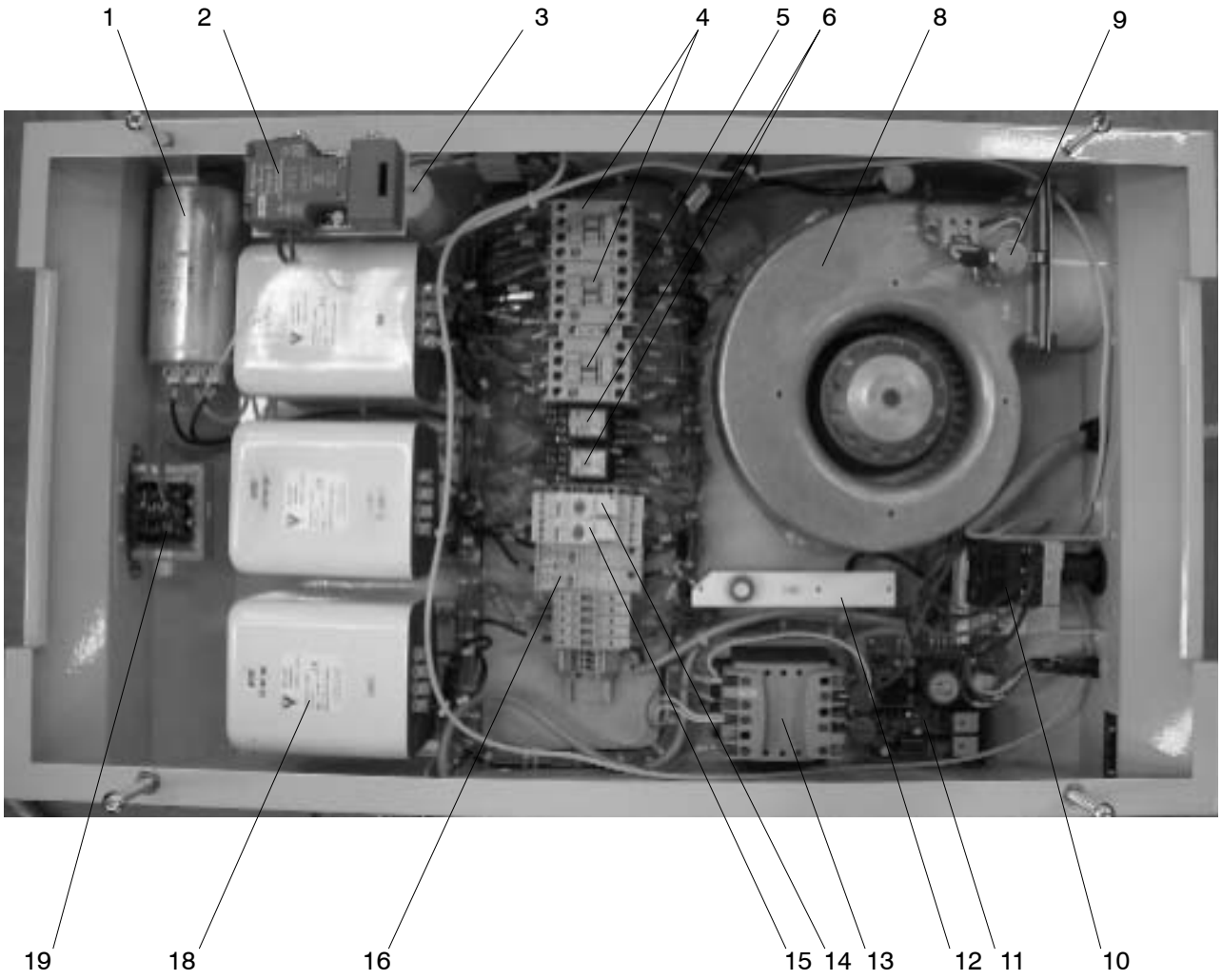

FIG. NUV 58A

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Item	Part	Description	Quantity	Note
1	7350853	Hood light shield seal	2	
2	7350479	Belt – conveyor 230mm wide	1	
3	7350674	UV lamp – Mercury	1	
NS	7350755	UV lamp – Halide/Gallium Indium	1	A
NS	7350756	UV lamp – Halide/Iron	1	A
NS	7350757	UV lamp – Halide/Gallium	1	A
NS	7350758	UV lamp – Mercury – Ozone Free	1	A
4	7350855	Terminal block	2	
5	7350856	Lamp support angle	2	
6	7350854	Hood light shield seal	2	
7	7350857	Light shield	2	

NOTE A: Not supplied with standard unit. Available as option.
B:
X:
AR: As Required
NS: Not Shown

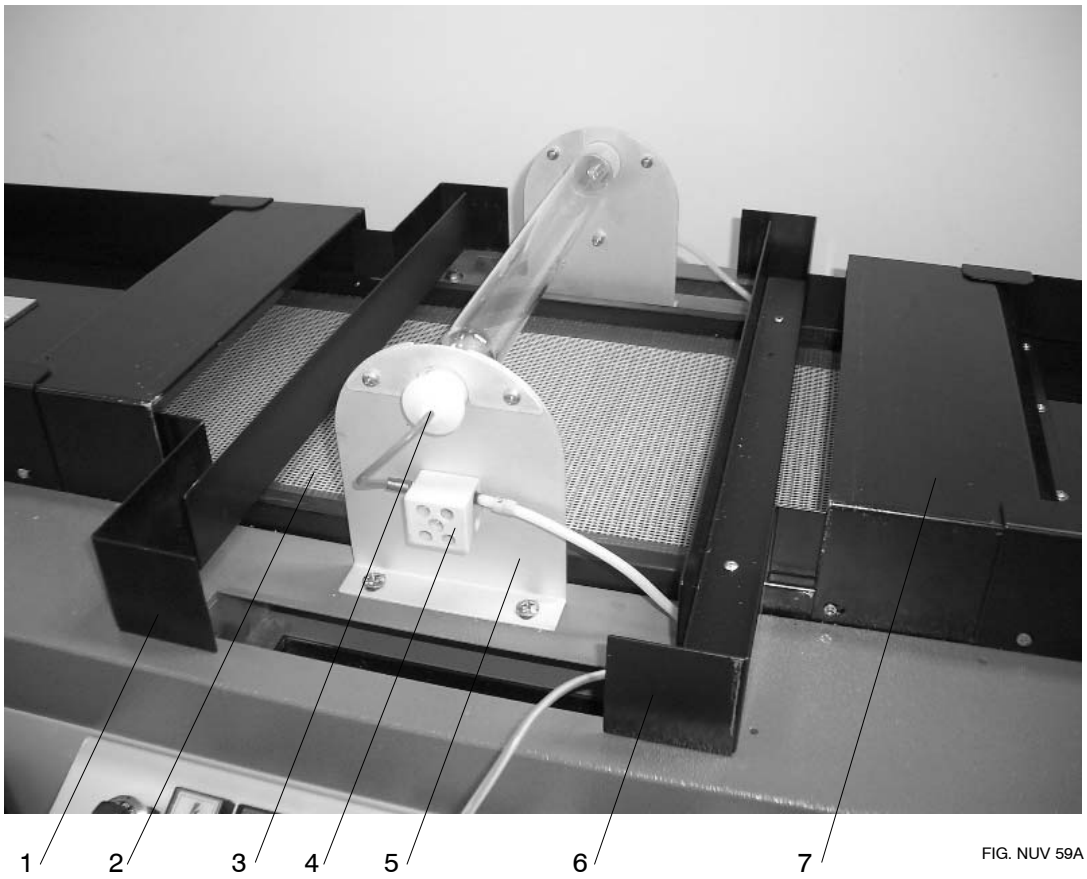

FIG. NUV 59A

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Item	Part	Description	Quantity	Note
–	7350574	MiniCure 380/400/415V 50Hz	1	
–	7350575	MiniCure 440/460/480V 60Hz	1	
NS	7350680	• Reflector	1	
NS	7350482	• Motor + gearbox – conveyor drive (M6.1)	1	
NS	7350483	• Belt – conveyor drive	1	
NS	7350484	• Sprocket – drive motor/roller	2	
NS	7350466	• Bearing – belt tracker roller	4	
NS	7350467	• Bearing – conveyor drive roller	2	
NS	7350468	• Bearing – conveyor idler roller	2	
NS	7350492	• Fuse 1A – 250V – Anti–Surge– 5 x 20 (F0.3/0.4/F6.1)	3	
NS	7350578	• Fuse 2A –250V – Anti–Surge– 5 x 20 (F1.0/F2.1)	2	
NS	1056877	• PCB – lamp power indicator trimmer (TM1)	1	
NS	7350652	• Bulb – panel switch (H0/H1.1/H2.2/H6.1/H6.2/H11/H12.1)	7	
NS	7350655	• Mains Cable	1.5m	
NS	7350033	• UV safety glasses	1 Pair	
NS	7350657	• Gloves	1 Pair	

NOTE A:

B:

X:

AR: As Required

NS: Not Shown

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Section 8
Specifications

Introduction

The following documents are included in this section:

Declaration of Conformity

System Specification

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NORDSON UV LIMITED
816 Leigh Road
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Fax:+44 (0)1753 558100
Email: technical@nordson-uv.com

EC DECLARATION OF CONFORMITY

We hereby declare that the following machinery complies with the essential safety requirements of the Machinery Directive 98/37/EEC, the Electromagnetic compatibility Directive 89/336EEC, the Low Voltage Directive 2006/95/EEC and their amendments.

Machine Description	MiniCure UV Curing System		
Make	MiniCure		
Type	400V 25A 3ph 50Hz	Serial Number	MIN 07 XXX
Manufactured By	Nordson UV Ltd		
Year of manufacture	2007		

This machinery has been designed and manufactured using the following transposed harmonised European Standards.

EN12100 Parts 1&2:2003	Safety of Machinery – Basic concepts, general principles for design.
EN60950 Part 1:2002	Information Technology Equipment – Safety – Part 1: General Requirements
EN61000-6-2:2005	Electromagnetic compatibility (EMC) – Generic standards – Immunity standard for industrial environments
EN61000-6-4:2001	Electromagnetic compatibility (EMC) – Generic standards – Emission standard for industrial environments

Name **Dan Ancliffe** Position **Engineering Manager**

Being the responsible person appointed by the manufacturer

Signed _____ Date 23rd August 2007

Identification of person if signing on behalf of above

Name _____ Position _____

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Email: technical@nordson-uv.com

EC DECLARATION OF CONFORMITY

We hereby declare that the following machinery complies with the essential safety requirements of the Machinery Directive 98/37/EEC, the Electromagnetic compatibility Directive 89/336EEC, the Low Voltage Directive 2006/95/EEC and their amendments.

Machine Description	MiniCure UV Curing System		
Make	MiniCure		
Type	460V 25A 3ph 60Hz	Serial Number	MIN 07 XXX
Manufactured By	Nordson UV Ltd		
Year of manufacture	2007		

This machinery has been designed and manufactured using the following transposed harmonised European Standards.

EN12100 Parts 1&2:2003	Safety of Machinery – Basic concepts, general principles for design.
EN60950 Part 1:2002	Information Technology Equipment – Safety – Part 1: General Requirements
EN61000-6-2:2005	Electromagnetic compatibility (EMC) – Generic standards – Immunity standard for industrial environments
EN61000-6-4:2001	Electromagnetic compatibility (EMC) – Generic standards – Emission standard for industrial environments

Name **Dan Ancliffe** Position **Engineering Manager**

Being the responsible person appointed by the manufacturer

Signed _____ Date 23rd August 2007

Identification of person if signing on behalf of above

Name _____ Position _____

System Specification

Input Voltages

Model 1	50Hz	380V	400V	415V
Model 2	60Hz	440V	460V	480V

3 phase + neutral. Refer to rating label.

Current Consumption

Start-up: 25 amps (@400V)

Running: 10 amps (@400V)

Max. Working Temp.

40° C

Max. Working Humidity

85%

Ultraviolet Light Source

Primarc medium pressure mercury vapor lamp rated 120W/cm (300W/in)

Effective Curing Width

230mm (9”)

Reflector

Highly polished anodized aluminium

Conveyor

Full-length PTFE-coated belt with high-power vacuum hold-down

Cooling

Air cooled by integral fan

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Additional Features

- Power switching 80W/cm, 120W/cm
- Lamp hour counter
- Earth leakage and hood interlock offering extra user safety protection
- Emergency stop button
- Durable powder-coated finish

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Section 9
Drawings

Circuit Diagrams (50Hz)

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DRG.No. 08 320537 01

THIRD ANGLE PROJECTION

DO NOT SCALE

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55V – RED
0V – RED
110VAC – RED
} CONTROL CIRCUIT

200–600VAC – BLACK
NEUTRAL – BLUE
HT – CLEAR
CTE – GREEN
EARTH – YELLOW/GREEN

Q0 – MAIN ISOLATOR/CIRCUIT BREAKER

INPUT SUPPLY

NOTE: L1+L2+L3+N TO PASS THROUGH SENSOR

L1 BROWN
L2 BLACK
L3 GRAY
N BLUE
PE GREEN / YELLOW

SHUNT TRIP

A0 EARTH LEAKAGE SENSOR CURRENT OPERATED

S0 ET1 ET3 S11 V1

K1.1 ET2 S1.1 S1.2 EMERGENCY STOP INTERLOCK

F0.1 2A 250v 1R1 (MOV'S)

T0

F0.3 1A 250v V1C

F0.4 1A 250v VCC

F2.1 2A 250v F1 K10.1 F2

EXHAUST FAN

F6.1 2A 250v K6.1 M7 M9 A6.1

F226S

M12 RED +A

M13 BLACK –A (SCREENED CABLES)

M6.1

NOTE: ALL CABLE SCREENS MUST BE EARTHED AT THE FILTER BASE PLATE TO AVOID EARTH LOOPS

L6 CHOKE 140 WATTS

P1 P2 P3 PT1

CONVEYOR MOTOR + CONTROL

IMPORTANT NOTE:
EARTH CONNECTED CONTROL VOLTAGE:
IF CONNECTION IS REMOVED, THEN AN INSULATION MONITORING DEVICE MUST BE PROVIDED.

V1 0V VC
1 ~ 55–0–55VAC CONTROL VOLTAGE

V1–VC = 110VAC CONTROL VOLTAGE
V1–0V = 55VAC CONTROL VOLTAGE

NOTES:

S0 – ELS TEST (NEXT TO ISOLATOR)
S1.1 – CONTROL LATCH
S1.2 – EMERGENCY STOP
S11 – LAMP ON (CONTROL PANEL)

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE. REMOVE ALL BURRS AND SHARP EDGES. ALL MACHINED PARTS TO BE THOROUGHLY CLEANED AND DEGREASED

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ISS.	M.S.No.	D/MAN	DATE
A	MINICURE	DGB	18/05/2006
B	MINICURE	SP	19/05/2006
C	MINICURE	LJ	07/11/06
D	MINICURE	LJ	09/11/06

WAS PRIMARC DRAWING 3015

ISSUE B:
AMEND CABLE COLOURS TO EC SPEC.
ADD CONTROL TRANSFORMER EARTH CONNECTION TEXT. 19/05/06.

ISSUE C:
MOTOR FILTER ADDED 05296

ISSUE D:
MOTOR FILTER REMOVED, A6.1 DETAIL ADDED

GENERAL TOLERANCES
TO BS 308 1972 (METRIC)

WHOLE No.	± 1mm
DECIMAL	± .25mm
DRILLED	+ .13mm
HOLES	– 0
PUNCHED	+ 0
HOLES	– .13mm
ANGULAR TOL	± ½°

MATERIAL
FINISH
SUR/AREA
SCALE 1:1

TITLE
CIRCUIT DIAGRAM
MINICURE 3 PHASE & POWER

LATEST ISS. D

DRAWN DGB 18/05/2006
CHECKED

DRG.No. 08 320537 01

SHEET 1 OF 1

DRG.No. 08 320537 02

THIRD ANGLE PROJECTION

DO NOT SCALE

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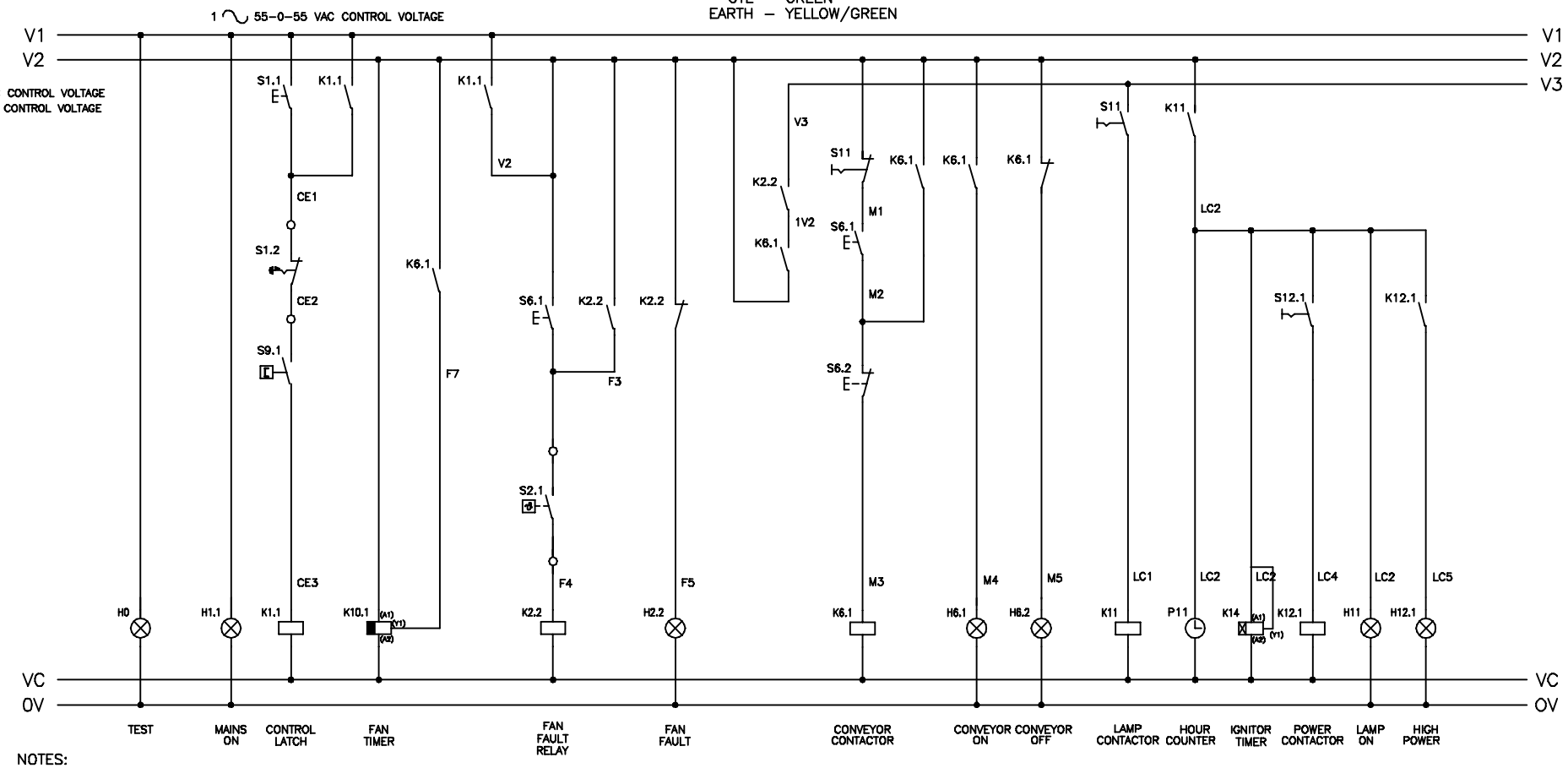
55V – RED
0V – RED
110VAC – RED
} CONTROL CIRCUIT
200–600VAC – BLACK
NEUTRAL – BLUE
HT – CLEAR
CTE – GREEN
EARTH – YELLOW/GREEN

ALL CABLES ON THIS CIRCUIT 0.5mm

V1–VC = 110VAC CONTROL VOLTAGE
V1–0V = 55VAC CONTROL VOLTAGE



NOTES:
S1.1 – CONTROL LATCH
S1.2 – EMERGENCY STOP
S2.1 – FAN AIRFLOW SWITCH
S6.1 – CONVEYOR ON
S6.2 – CONVEYOR OFF
S9.1 – INTERLOCK SWITCH
S11 – LAMP ON
S12.1 – LOW/HIGH POWER

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE. REMOVE ALL BURRS AND SHARP EDGES. ALL MACHINED PARTS TO BE THOROUGHLY CLEANED AND DEGREASED

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ISS.	M.S.No.	D/MAN	DATE
A	MINICURE	DGB	18/05/2006
B	MINICURE	SP	19/05/2006

WAS PRIMARC DRAWING 3016

ISSUE B:
AMEND CABLE COLOURS TO EC SPEC.
AMEND CONTROL VOLTAGE TEXT. 19 /05 06.

GENERAL TOLERANCES
TO BS 308 1972 (METRIC)

WHOLE No.	± 1mm
DECIMAL	± .25mm
DRILLED	+ .13mm
HOLES	– 0
PUNCHED	+ 0
HOLES	– .13mm
ANGULAR TOL	± ½°

MATERIAL
FINISH
SUR/AREA
SCALE 1:1

LATEST ISS. B

TITLE
CIRCUIT DIAGRAM
MINICURE CONTROL CIRCUIT

DRAWN DGB 18/05/2006
CHECKED

DRG.No. 08 320537 02

SHEET 1 OF 1

DRG.No. 08 320537 03

THIRD ANGLE PROJECTION

DO NOT SCALE

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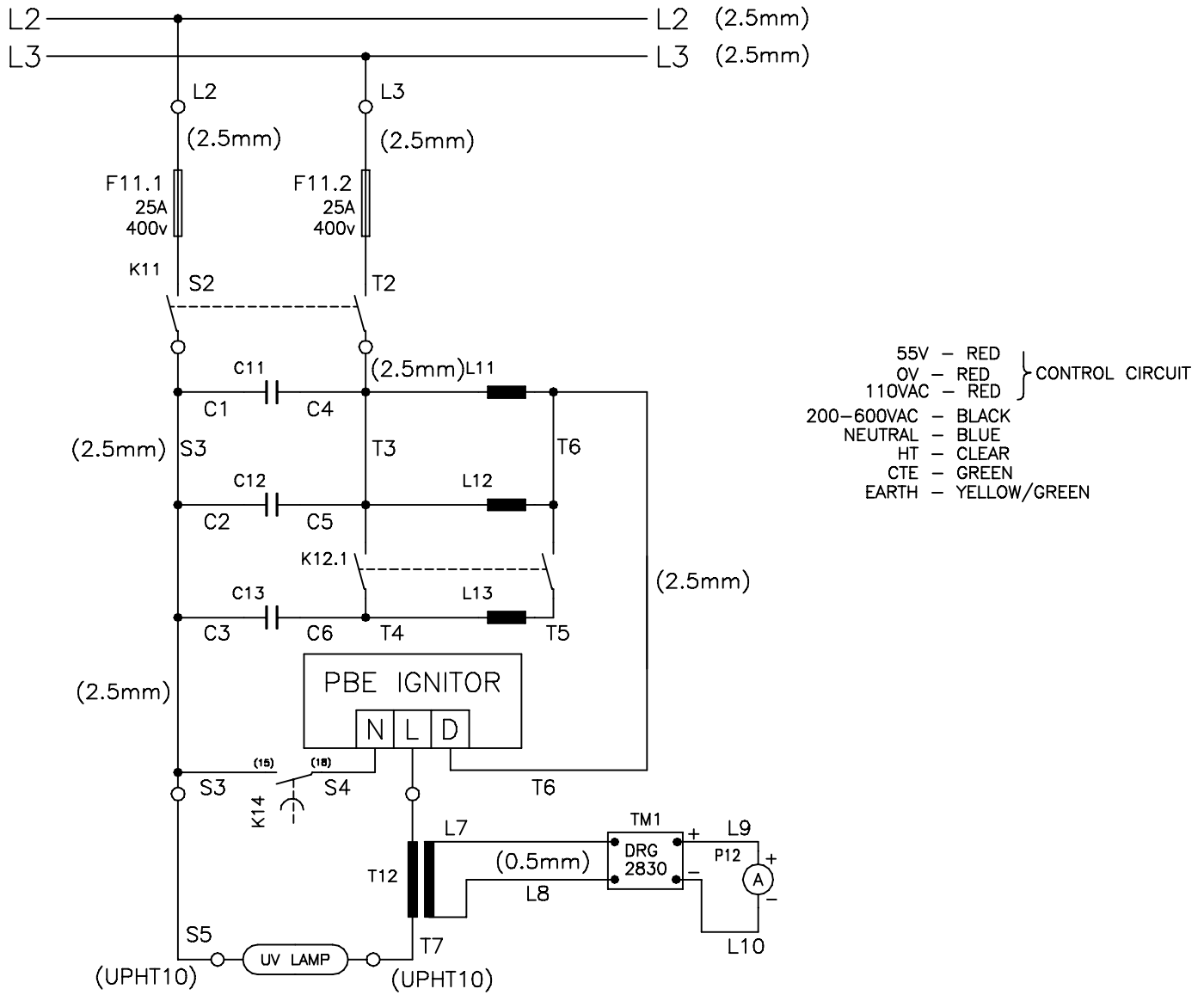

55V – RED
0V – RED
110VAC – RED
} CONTROL CIRCUIT

200–600VAC – BLACK
NEUTRAL – BLUE
HT – CLEAR
CTE – GREEN
EARTH – YELLOW/GREEN

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE. REMOVE ALL BURRS AND SHARP EDGES. ALL MACHINED PARTS TO BE THOROUGHLY CLEANED AND DEGREASED

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ISS.	M.S.No.	D/MAN	DATE
A	MINICURE	DGB	18/05/2006
B	MINICURE	SP	19/05/2006

WAS PRIMARC DRAWING 3017

ISSUE B:
AMEND CABLE COLOURS TO EC SPEC.
19/05/06.

GENERAL TOLERANCES
TO BS 308 1972 (METRIC)

WHOLE No.	± 1mm
DECIMAL	± .25mm
DRILLED	+ .13mm
HOLES	– 0
PUNCHED	+ 0
HOLES	– .13mm
ANGULAR TOL	± ½°

MATERIAL

FINISH

SUR/AREA

SCALE 1:1

LATEST ISS. B

TITLE
CIRCUIT DIAGRAM
MINICURE LAMP CIRCUIT

DRAWN
DGB 18/05/2006
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DRG.No.
08 320537 03

SHEET 1 OF 1

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Circuit Diagrams (60Hz)

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THIRD ANGLE PROJECTION

DO NOT SCALE

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60V – RED
0V – RED
110VAC – RED
} CONTROL CIRCUIT

200–600VAC – BLACK
NEUTRAL – BLUE
HT – CLEAR
CTE – GREEN
EARTH – YELLOW/GREEN

Q0 – MAIN ISOLATOR/CIRCUIT BREAKER

INPUT SUPPLY

NOTE: L1+L2+L3+ TO PASS THROUGH SENSOR

L1 BROWN
L2 BLACK
L3 GRAY
BLUE
PE GREEN / YELLOW

L1 (2.5mm)
L2 (2.5mm)
L3 (2.5mm)
PE (2.5mm)

SHUNT TRIP

A0

ET1 ET2 ET3

K1.1

S0 S11 S1.1 S1.2

V1 V1E V1C

T0

1R1 R1 (MOV'S) R2

2.5AMP

F0.3 1AMP 250v F0.4 1AMP 250v

VCC

F2.1 2AMP 250v F1

K10.1

F6.1 1AMP 250v K6.1 M7

M9

EARTH LEAKAGE SENSOR CURRENT OPERATED

EMERGENCY STOP INTERLOCK

NOTES:

S0 – ELS TEST (NEXT TO ISOLATOR)
S1.1 – CONTROL LATCH
S1.2 – EMERGENCY STOP
S11 – LAMP ON (CONTROL PANEL)

IMPORTANT NOTE:
EARTH CONNECTED CONTROL VOLTAGE:
IF CONNECTION IS REMOVED, THEN AN INSULATION MONITORING DEVICE MUST BE PROVIDED.

0 V1 V5 VM2

1 ~ 0–60–110–230VAC/60Hz
CONTROL VOLTAGE

0–V1 = 60VAC CONTROL VOLTAGE
0–V5 = 110VAC CONTROL VOLTAGE
0–VM2 = 230VAC CONTROL VOLTAGE

M1 EXHAUST FAN

F226S

A6.1

NOTE: ALL CABLE SCREENS MUST BE EARTHED AT THE FILTER BASE PLATE TO AVOID EARTH LOOPS

RED M12 M6.1
BLACK M13
(SCREENED CABLES)

L6 CHOKE 140 WATTS

PT1

CONVEYOR MOTOR + CONTROL

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE. REMOVE ALL BURRS AND SHARP EDGES. ALL MACHINED PARTS TO BE THOROUGHLY CLEANED AND DEGREASED

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ISS.	M.S.No.	D/MAN	DATE
A	MINICURE 60Hz	SP	30/05/2006
B	MINI C 60Hz	LJ	07/11/06
C	MINI C 60Hz	LJ	09/11/06

B) MOTOR FILTER ADDED.
C) MOTOR FILTER REMOVED. A6.1 DETAIL ADDED.

GENERAL TOLERANCES
TO BS 308 1972 (METRIC)

WHOLE No. ± 1mm
DECIMAL ± .25mm
DRILLED + .13mm
HOLES – 0
PUNCHED + 0
HOLES – .13mm
ANGULAR TOL ± ½°

MATERIAL
FINISH
SUR/AREA
SCALE 1:1

LATEST ISS. C

TITLE
CIRCUIT DIAGRAM 60Hz
MINICURE 3 PHASE & POWER

DRAWN SP 30/05/2006
CHECKED SP 30/05/2006

DRG.No. 08 320546 01

SHEET 1 OF 1

DRG.No. 08 320546 02

THIRD ANGLE PROJECTION

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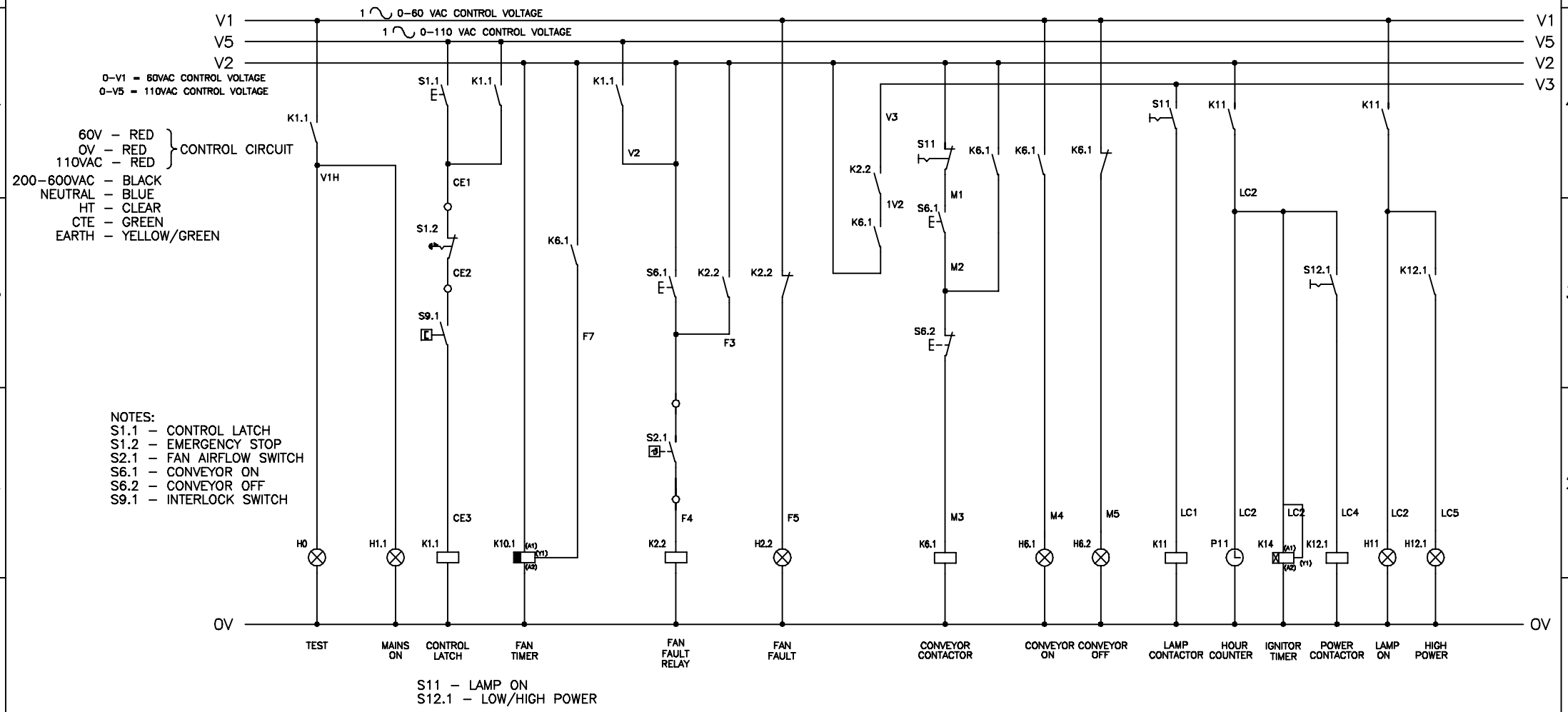
ALL CABLES ON THIS CIRCUIT 0.5mm



NOTES:
S1.1 – CONTROL LATCH
S1.2 – EMERGENCY STOP
S2.1 – FAN AIRFLOW SWITCH
S6.1 – CONVEYOR ON
S6.2 – CONVEYOR OFF
S9.1 – INTERLOCK SWITCH

S11 – LAMP ON
S12.1 – LOW/HIGH POWER

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GENERAL TOLERANCES TO BS 308 1972 (METRIC)

WHOLE No. ± 1mm
DECIMAL ± .25mm
DRILLED + .13mm
HOLES – 0
PUNCHED + 0
HOLES – .13mm
ANGULAR TOL ± ½°

MATERIAL
FINISH
SUR/AREA
SCALE 1:1

TITLE
CIRCUIT DIAGRAM 60Hz
MINICURE CONTROL CIRCUIT

LATEST ISS. A

DRAWN SP 30/05/2006
CHECKED SP 30/05/2006

DRG.No. 08 320546 02

SHEET 1 OF 1

DRG.No. 08 320546 03

THIRD ANGLE PROJECTION

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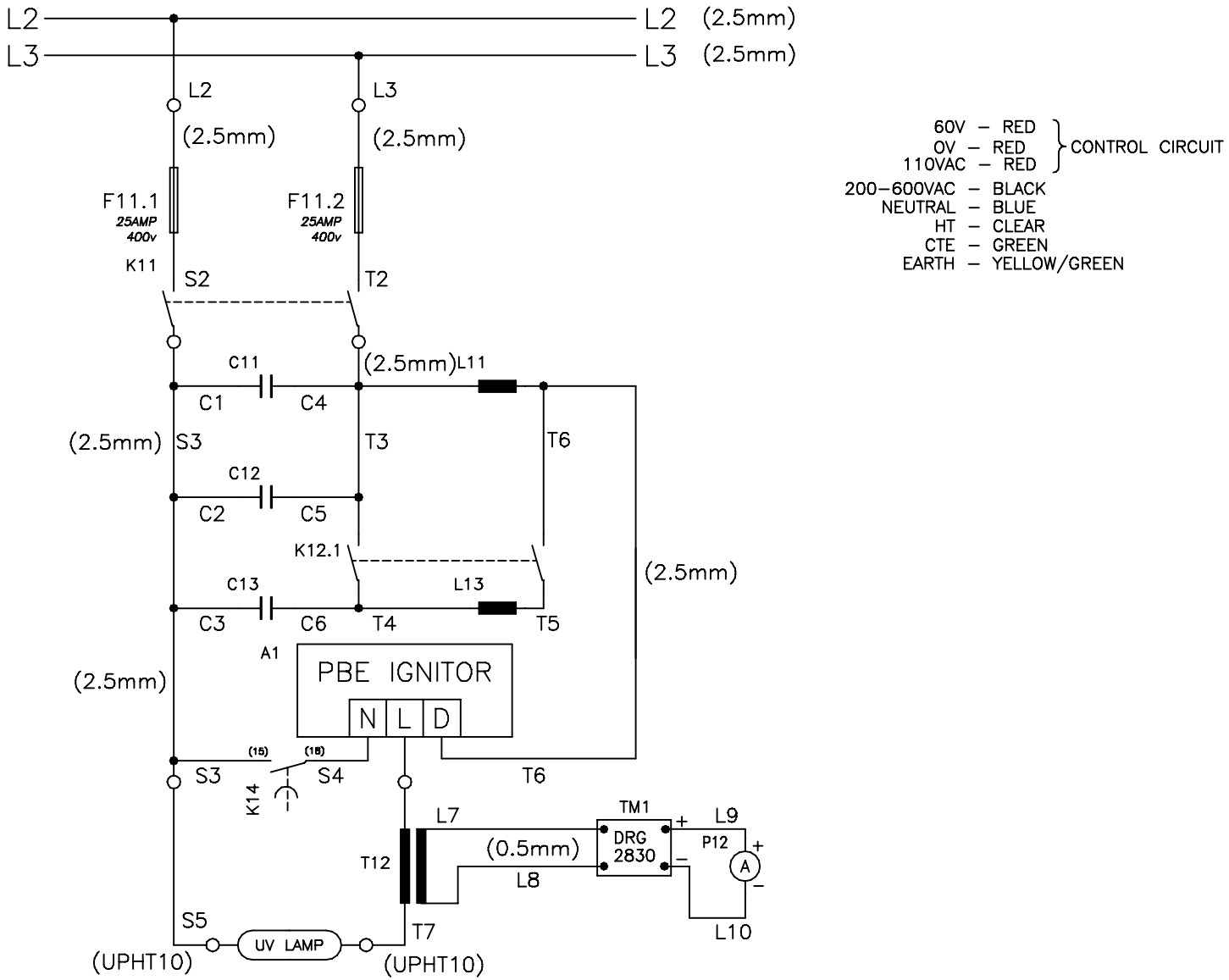

60V – RED
0V – RED
110VAC – RED
} CONTROL CIRCUIT

200–600VAC – BLACK
NEUTRAL – BLUE
HT – CLEAR
CTE – GREEN
EARTH – YELLOW/GREEN

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE. REMOVE ALL BURRS AND SHARP EDGES. ALL MACHINED PARTS TO BE THOROUGHLY CLEANED AND DEGREASED

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A	MINICURE 60Hz	SP	30/05/2006
B	MINICURE 60Hz	LJ	15/03/07

B) L12 REMOVED

GENERAL TOLERANCES
TO BS 308 1972 (METRIC)

WHOLE No. ± 1mm
DECIMAL ± .25mm
DRILLED + .13mm
HOLES − 0
PUNCHED + 0
HOLES − .13mm
ANGULAR TOL ± ½°

MATERIAL
FINISH
SUR/AREA
SCALE 1:1

TITLE
CIRCUIT DIAGRAM 60Hz
MINICURE LAMP CIRCUIT

LATEST ISS. A

DRAWN SP 30/05/2006
CHECKED SP 30/05/2006

DRG.No. 08 320546 03

SHEET 1 OF 1